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Daniel R. Caldwell

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TEXAS INSTRUMENTS INCORPORATED

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EXAMINER

NGUYEN, DUNG V

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BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES

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*Ex parte* DANIEL R. CALDWELL and THOMAS A. KIEZ

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Appeal 2007-4037  
Application 10/706,762  
Technology Center 3700

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Decided: January 25, 2008

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Before WILLIAM F. PATE, III, TERRY J. OWENS, and JOSEPH A.  
FISCHETTI, *Administrative Patent Judges*.

OWENS, *Administrative Patent Judge*.

DECISION ON APPEAL

The Appellants appeal from a rejection of claims 11-20, which are all of the pending claims.

THE INVENTION

The Appellants claim a chemical mechanical polishing monitoring system and method. Claim 11 is illustrative:

11. A chemical mechanical polishing monitoring system, comprising:
- a peristaltic pump operable to deliver a slurry to a polishing pad;
  - a controller operable to send a drive voltage to the peristaltic pump based on a desired volumetric flow rate for the slurry;
  - a rotation sensing device coupled to a rotating shaft of the peristaltic pump and operable to sense a rotation of the peristaltic pump, the rotation sensing device further operable to generate a voltage indicative of the rotation of the peristaltic pump; and
  - a computer coupled to the rotation sensing device and the controller, the computer operable to:
    - receive the drive voltage from the controller;
    - receive the voltage from the rotation sensing device; and
    - compare the voltage to a threshold voltage that is based, in part, on the drive voltage in order to monitor the peristaltic pump during use.

#### THE REFERENCE

Melcer	US 6,183,341 B1	Feb. 6, 2001
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#### THE REJECTIONS

The claims stand rejected over Melcer as follows: claims 11-16 and 18 as anticipated under 35 U.S.C. § 102(b), and claims 17, 19 and 20 as obvious under 35 U.S.C. § 103.

#### OPINION

The rejection under 35 U.S.C. § 102(b) is affirmed as to claims 11, 13, 14, 16 and 18, and reversed as to claims 12 and 15. The rejection under 35 U.S.C. § 103 is affirmed.

Rejection under 35 U.S.C. § 102(b)

Claims 11, 13, 14, 16 and 18

The Appellants do not separately argue the patentability of claim 13

that depends from independent claim 11, and claims 16 and 18 that depend from independent claim 14 (Br. 4-5). Claims 13, 16 and 18, therefore, stand or fall with the argued claim from which they depend. *See* 37 C.F.R. § 41.37(c)(1)(vii)(2007).

Melcer discloses a chemical mechanical polishing slurry pump system and method which uses a peristaltic slurry pump's inlet pressure as input to a pump controller and adjusts the pump's speed to account for variations in the pump's slurry inlet pressure (abstract; col. 1, ll. 4-6, 64-67).

The pump controller uses the specified flow rate, the sensed inlet supply pressure, and known relationship between the pump speed and volume output to compute the required pump speed. The controller adjusts the voltage applied to the pump motor to attain the required pump speed. The pump motor speed is monitored by the encoder 9 which senses the speed of the pump or its motor and transmits a corresponding signal representative of the pump speed to the pump controller. The pump controller adjusts its output to drive the motor accordingly. In this manner, the slurry pump output volume may be maintained nearly constant despite significant variations in slurry inlet pressure. [Col. 2, l. 64 – col. 3, l. 8.]

The Appellants recite the limitations in the independent claims (11 and 14) and argue, with respect to claim 11, that “[n]o such device is found in Melcer” (Br. 3-4) and argue, regarding claim 14, that “[t]he instant method of claim 14 is not described in Melcer” (Br. 4-5). Those arguments are not well taken because the Appellants provide no explanation as to why any Melcer component or step relied upon by the Examiner fails to correspond to one of the Appellants' claim limitations in the manner proposed by the Examiner (Ans. 3).

The Appellants argue that “Melcer does not describe or teach sending a drive voltage base don [sic] volumetric flow rate to the pump and

comparing a voltage dependent on the actual speed of the pump with a threshold voltage that depends on the drive voltage” (Br. 4). Melcer uses variables including the desired volumetric flow rate to compute the required pump speed, and Melcer’s controller adjusts the voltage applied to the pump motor to attain that pump speed (col. 2, l. 62 – col. 3, l. 1). Hence, Melcer sends a drive voltage to the pump based on a desired volumetric flow rate to the pump as required by the Appellants’ claim 11. Melcer’s receipt by the controller of the signal sent by the encoder that senses the speed of the pump or its motor (col. 3, ll. 1-5) corresponds to the Appellants’ receipt of a voltage from a rotation sensing device. Melcer’s adjustment of the controller’s drive voltage to the pump’s motor according to that signal (col. 3, ll. 5-6) necessarily requires comparing that signal to the controller’s drive voltage to the pump motor (col. 2, l. 67 – col. 3, l. 1). That comparison corresponds to the comparison in the Appellants’ claim 11 of the voltage from the rotation sensing device to a threshold voltage based in part on the pump’s drive voltage.

The Appellants argue that Melcer “corrects pump speed based upon inlet pressure whereas the subject disclosure corrects pump speed based upon measured pump rotational speed and other factor, not of which [sic] includes inlet pressure” (Reply Br. 2). The other factor referred to by the Appellants appear to be the drive voltage to the peristaltic pump. Inlet supply pressure is one of the inputs used in computing Melcer’s required pump speed and, based thereon, adjusting the pump’s drive voltage (col. 2, l. 64 – col. 3, l. 1). The Appellants’ claims do not require that the drive voltage to the peristaltic pump is based only upon the desired slurry volumetric flow rate. Hence, the Appellants’ claims encompass basing that

drive voltage on the desired slurry volumetric flow rate and other inputs such as Melcer's pump inlet pressure.

We therefore are not convinced of reversible error in the rejection of claims 11, 13, 14, 16, and 18.

#### Claims 12 and 15

Claim 12, which depends from claim 11, requires that "the computer is further operable to generate a message based on the comparison."

Claim 15, which depends from claim 14, requires "generating a message based on the comparison." For a claimed invention to be anticipated under 35 U.S.C. § 102(b), all of the elements of the claim must be found in one reference. *See Scripps Clinic & Research Found. v. Genentech Inc.*, 927 F.2d 1565, 1576 (Fed. Cir. 1991). The Examiner does not point out where Melcer discloses those claim requirements (Ans. 3), and the Examiner does not respond to the Appellants' arguments regarding those claim requirements (Ans. 4-5). The Examiner, therefore, has not carried the burden of establishing a prima facie case of anticipation of the inventions claimed in the Appellants' claims 12 and 15.

#### Rejection under 35 U.S.C. § 103

The Appellants rely regarding claims 17, 19 and 20 on their argument set forth with respect to claim 14 from which those claims depend (Br. 5). That argument is not persuasive for the reason given above. Hence, the Appellants have not convinced us of reversible error in the rejection of claims 17, 19 and 20.

DECISION

The rejection of claims 11-16 and 18 under 35 U.S.C. § 102(b) is affirmed as to claims 11, 13, 14, 16 and 18, and reversed as to claims 12 and 15. The rejection of claims 17, 19 and 20 under 35 U.S.C. § 103 is affirmed.

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a).

AFFIRMED-IN-PART

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